Letters to the Editor

I wish to correct an error which appeared in my review article entitled: "Potential Dilemma: The Method of Meeting Automotive Exhaust Emission Standards of the Clean Air Act of 1970", EHP Vol. 8: 165–190, 1974. On page 177, I stated that BaP concentration in the exhaust emissions was a function of the lead deposits on the engine cylinder wall. The implication being that BaP concentration in exhaust emission was a function of gasoline lead content. These conclusions were drawn from the work of G. P. Gross. (The effect of fuel and vehicle variables on polynuclear aromatic hydrocarbon and phenol emissions. Paper No. 720210 presented at SAE Automotive Engineering Congress, Detroit, Michigan, January 10–14, 1972).

In a subsequent report, (CRC–APRAC Project No. CAPE–6–68. Fourth Annual (Final) Report on Gasoline Composition and Vehicle Exhaust Gas Polynuclear Aromatic Content, October 31, 1973) this error was rectified. Lead and phosphorus deposits on cylinder walls did not appear to influence BaP concentrations in exhaust emissions. The major variable affecting BaP concentration in exhaust emission was the fuel content of BaP. BaP concentration in exhaust emissions was also strongly influenced by the rate of oil consumption during engine operation.

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I enjoyed reading the paper "Potential Dilemma: The Methods of Meeting Automotive Exhaust Emission Standards of the Clean Air Act of 1970" by Warren T. Piver in the August issue of *Environmental Health Perspectives*. I was particularly interested in the several pages on methylcyclopentadienyl manganese tricarbonyl, which my company now markets as an octane improver for unleaded gasoline under the name "Ethyl" MMT. There are a few inaccuracies in the discussion of MMT, and I thought it would serve a useful purpose to bring them to your attention.

Our recommended maximum use concentration of MMT in gasoline is 0.125 gram of contained manganese per gallon, which corresponds to 0.5 g/gal of the compound. The antiknock data at 0.25 g Mn/gal in the *Automotive Engineering* article cited in your paper were obtained to help us determine what our maximum recommended concentration should be. The 0.125 g/gal was based on considerations of engine durability problems at higher concentrations and on less attractive octane economics at higher concentrations, since the incremental effectiveness of antiknocks tends to level off at higher concentrations. (Incidentally, the *Automotive Engineering* article does not, as your paper states, say that 0.25 g Mn/gal has the same octane boosting and antiknock characteristics as TEL. Nowhere does it make any comparison with TEL.)

The recommended upper limit of manganese concentration is pertinent both to the treat cost and to the expected airborne manganese concentrations due to use of the product. The treat cost would be much lower than the 2.5–4¢/gal estimated in your paper. At our current price of $2.55/lb of MMT the maximum treat cost would be 255¢/lb cpd $\times$ 1 lb/454 g $\times$ 0.5 g cpd/gal = 0.28¢/gal.